

CLAIMS

1. A therapeutic agent for inhibiting vascularization comprising as the effective ingredient, a substance that inhibits the action due to CXCR4.

5 2. A therapeutic agent for a solid cancer comprising as the effective ingredient, a substance that inhibits the action due to CXCR4.

 3. A therapeutic agent for a disease pathologically caused by neovascularization comprising
10 as the effective ingredient, a substance that inhibits the action due to CXCR4.

 4. A therapeutic agent for repairing a tissue comprising as the effective ingredient, a substance that inhibits the action due to CXCR4.

15 5. The therapeutic agent according to any of claims 1-4, wherein the substance inhibits the very binding between SDF-1 and CXCR4.

 6. The therapeutic agent according to any of claims 1-4, wherein the substance inhibits signaling
20 from CXCR4 to nuclei.

 7. The therapeutic agent according to any of claims 1-4, wherein the substance inhibits the very expression of CXCR4.

 8. The therapeutic agent according to any of
25 claims 1-4, wherein the substance inhibits the very expression of SDF-1.

9. The therapeutic agent according to claim 5, wherein the substance inhibits SDF-1.

10. The therapeutic agent according to claim 5, wherein the substance inhibits CXCR4.

5 11. The therapeutic agent according to claim 9, wherein the substance inhibits CXCR4 in antagonistic competition with SDF-1.

10 12. The therapeutic agent according to claim 9, wherein the substance inhibits SDF-1 from binding to CXCR4 by binding to SDF-1.

15 13. The therapeutic agent according to claim 11, wherein the substance is one selected from the group consisting of a SDF-1-like protein, a fused protein of the foregoing protein with another peptide or polypeptide, a partial peptide of SDF-1, and a low molecular weight compound having a structure similar to a binding site of SDF-1.

20 14. The therapeutic agent according to claim 12, wherein the substance is one selected from the group consisting of an anti-SDF-1 antibody, a fragment of said antibody possessing the activity of the anti-SDF-1 antibody, a fused protein possessing binding activity to SDF-1, a substance that induces a structural change in SDF-1, and a low molecular weight compound capable of binding to the CXCR4-binding site of SDF-1.

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15. The therapeutic agent according to claim 10, wherein the substance inhibits CXCR4 in antagonistic competition with CXCR4 for binding to SDF-1.

5 16. The therapeutic agent according to claim 10, wherein the substance inhibits SDF-1 from binding to CXCR4 by binding to CXCR4.

10 17. The therapeutic agent according to claim 15, wherein the substance is one selected from the group consisting of a soluble CXCR4 that antagonizes CXCR4 in the inhibition, a protein having a CXCR4-like structure, a fused protein of the foregoing protein with another peptide or polypeptide, a partial peptide of CXCR4, and a low molecular weight compound having a structure similar to a binding site of SDF-1.

15 18. The therapeutic agent according to claim 16, wherein the substance is one selected from the group consisting of an anti-CXCR4 antibody, a fragment of said antibody possessing the activity of anti-CXCR4 antibody, a fused protein possessing binding activity to CXCR4, a substance that induces a structural change in SDF-1, and a low molecular weight compound capable of binding to the SDF-1-binding site of CXCR4.

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25 19. The therapeutic agent according to claim 6, wherein the substance is an inhibitor of a signaling system located downstream of a G protein-coupled protein and is one selected from the group consisting

of a MAPK cascade inhibitor, a phospholipase C (PLC) inhibitor, and a PI3 kinase inhibitor.

20. The therapeutic agent according to claim 7,
wherein the substance is a substance that causes
5 apparent disappearance of CXCR4 from cells by acting
on cell membrane to vary fluidity thereof and to cause
disappearance of CXCR4 from the cell membrane.

21. The therapeutic agent according to claim 7,
wherein the substance is a substance that inhibits the
10 very expression of CXCR4 and is one selected from the
group consisting of an antigen, an antisense
polynucleotide, an antisense RNA expressed by an
antisense vector, a ribozyme, and an inhibitor against
the expression control site of CXCR4.

15 22. The therapeutic agent according to claim 8,
wherein the substance is an antisense for the
inhibition of expression of SDF-1.

23. The therapeutic agent according to claim 8,
wherein the substance shows inhibition against the
20 expression control site of SDF-1.

24. A method for suppressing vascularization
comprising using a substance that inhibits the action
due to CXCR4.

25 25. A method for treating a solid cancer
comprising using a substance that inhibits the action
due to CXCR4.

26. A method for treating a disease
pathologically caused by neovascularization comprising
using a substance that inhibits the action due to
CXCR4.

5 27. A method for repairing a tissue comprising
using a substance that inhibits the action due to
CXCR4.